Search Strategy

FILE 'USPATFULL' ENTERED AT 14:12:49 ON 10 DEC 2001

		E	SANCHEZ LUIS E/IN
		E	DURAN JUAN P/IN
L1	33	S	VACCINE (5W) PORCINE
L2	21	S	L1 AND VACCINE/CLM
L3	20	S	L2 AND (PORCINE/CLM OR PIG/CLM)
L4	93	S	MYCOPLASMA HYOPNEUMONIAE
L5	52	S	L4 AND (PIG OR PORCINE)
L6	36	S	L5 AND VACCINE
L7	31	S	L6 NOT L3
L8	2	S	PORCINE CORONAVIRUS
L9	0	S	(CORONAVIRUS EXPRESSION VECTOR? OR CORONAVIRUS VACCINE VECTOR

FILE 'WPIDS' ENTERED AT 14:42:17 ON 10 DEC 2001

		E	SANCHEZ L E/IN
L10	10	S	E3
		E	DURAN J P/IN
L11	4	S	E3
L12	3	S	L11 NOT L10
L13	1	S	PORCINE CORONAVIRUS? OR PIG CORONAVIRUS?
L14	34	S	MYCOPLASMA HYOPNEUMONIAE
L15	16	S	L14 AND (PIG OR PORCINE)
L16	11	S	DEFECTIVE VIRAL GENOME OR DEFECTIVE VIRAL VECTOR

FILE 'USPATFULL' ENTERED AT 14:53:26 ON 10 DEC 2001

L17	64	S	(DEFECTIVE VIRAL GENOME OR DEFECTIVE VIRAL VECTOR)
L18	6	S	L17 AND CORONAVIR?

FILE 'MEDLINE' ENTERED AT 14:55:03 ON 10 DEC 2001

		E	SANCHEZ L E/AU
L19	13	S	E3
		E	DURAN J P/AU
		E	VILLANUEVA S A/AU
L20	3	S	E3
L21	35	S	PORCINE CORONAVIR?
L22	44	S	DEFECTIVE VIRAL VECTOR? OR DEFECTIVE VIRAL GENOME?
L23	2	S	L22 AND VACCIN?
L24	583	S	DNA VACCINES
L25	0	S	L24 AND HELPER VIRUS?
L26	888	S	HELPER VIRUS
L27	38	S	L26 AND VACCIN?
L28	223	S	MUCOSAL VACCIN?
L29	0	S	L28 AND EXPRESSION VECTOR

L7 ANSWER 7 OF 31 USPATFULL
2000:170661 Recombinant ***mycoplasma*** ***hyopneumoniae*** ***vaccine*** .
Minion, F. Chris, Ames, IA, United States
Hsu, Tsungda, Bronx, NY, United States
Iowa State University Research Foundation, Inc., Ames, IA, United States (U.S. corporation)
US 6162435 20001219
APPLICATION: US 1998-198484 19981124 (9)
PRIORITY: US 1997-66565 19971126 (60)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A ***Mycoplasma*** ***hyopneumoniae*** protein prepared by recombinant DNA or synthetic means, DNA sequences coding for the protein, an expression vector and transformed host containing the DNA sequences, a ***vaccine*** based on the protein, a ***vaccine*** based on the DNA sequences, methods of treating swine to prevent enzootic pneumonia using the vaccines, and diagnostic tests based on the protein or antibodies raised against it for detecting the presence of Mhyo infection in swine herds.

CLM What is claimed is:
1. An isolated protein comprising the amino acid sequence of P102 having SEQ ID NO: 2.

2. A DNA encoding the protein of claim 1.

3. The DNA of claim 2, wherein said DNA is operatively linked to at least one control sequence.

4. A vector comprising the DNA of claim 2 wherein said vector is capable of expressing a protein encoded by said DNA.

5. A bacterial host cell transformed with the DNA of claim 2 wherein said bacterial host cell is capable of expressing a protein encoded by said DNA.

6. An immunogenic composition comprising the protein of claim 1.

7. An immunogenic composition comprising an immunogenic fragment of the protein of claim 1.

8. A DNA encoding an immunogenic fragment of the protein of claim 1.

9. The DNA of claim 8, wherein said DNA is operatively linked to at least one control sequence.

10. A vector comprising the DNA of claim 8 wherein said vector is capable of expressing a protein encoded by said DNA.

11. A bacterial host cell transformed with the DNA of claim 8 wherein said bacterial host cell is capable of expressing a protein encoded by said DNA.

12. A method of causing an immune response in an animal comprising the step of administering the protein of claim 1 to said animal.

13. A method of causing an immune response in an animal comprising the step of administering the protein of claim 7 to said animal.

14. A method for detecting the presence of P102 antibodies in a test sample, comprising the steps of: providing a test sample suspected of containing P102 antibodies; adding a quantity of the protein of claim 1 to the test sample, the quantity being sufficient to produce a detectable level of binding activity by anti-P102 antibodies in the test sample; and detecting the presence of P102 antibodies bound to said protein in the test sample.

15. A method for detecting the presence of P102 antibodies in a test sample, comprising the steps of: providing a test sample suspected of containing P102 antibodies; adding a quantity of an immunogenic fragment of the protein of claim 1 to the test sample, the quantity being sufficient to produce a detectable level of binding activity by anti-P102 antibodies in the test sample; and detecting the presence of P102 antibodies bound to said protein in the test sample.

16. A diagnostic kit for detecting the presence of P102 antibodies in a test sample, comprising: a carrier and at least one container, wherein said at least one container contains the protein of claim 1.

17. A diagnostic kit for detecting the presence of P102 antibodies in a test sample, comprising: a carrier and at least one container, wherein said at least one container contains an immunogenic fragment of the protein of claim 1.

L7 ANSWER 15 OF 31 USPATFULL
1998:91598 DNA sequences coding for ***mycoplasma*** ***hyopneumoniae*** surface antigens, corresponding proteins and use in vaccines and diagnostic procedures.
Wise, Kim S., Columbia, MO, United States
McIntosh, Mark A., Columbia, MO, United States
The Curators of the University of Missouri, Columbia, MO, United States (U.S. corporation)
US 5788962 19980804
APPLICATION: US 1996-703947 19960828 (8)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB ***Mycoplasma*** ***hyopneumoniae*** P65 surface antigens prepared by recombinant DNA or synthetic methods, protein antigens encoded by P65 gene, an expression vector and transformed host containing the antigens, a ***vaccine*** based on such antigens, methods of treating swine, etc. to prevent enzootic pneumonia using that ***vaccine*** and diagnostic tests to detect the presence of ***Mycoplasma*** ***hyopneumoniae*** .

CLM What is claimed is:
1. A ***vaccine*** for protecting a susceptible swine against mycoplasmal pneumonia caused by ***Mycoplasma*** ***hyopneumoniae*** comprising an immunogenic fusion protein in a suitable physiologically acceptable carrier, said fusion protein having a first amino acid sequence with the amino acid sequence depicted in FIG. 2 (SEQ ID NO:2), or immunogenic fragments thereof said first amino acid sequence being fused to a second amino acid sequence.

2. A method for inducing an immune response in a susceptible swine against mycoplasmal pneumonia caused by ***Mycoplasma*** ***hyopneumoniae*** , comprising administering to the swine a composition comprising an isolated and purified protein having the amino

acid sequence depicted in FIG. 2 (SEQ ID NO:2), immunogenic fragments or immunogenic fusion proteins thereof in an amount effective for producing an immune response against mycoplasmal pneumonia caused by ***Mycoplasma*** ***hyopneumoniae*** .

3. A ***vaccine*** for protecting a susceptible swine against mycoplasmal pneumonia caused by ***Mycoplasma*** ***hyopneumoniae*** comprising an immunogenic fusion protein in a suitable physiologically acceptable carrier, said fusion protein having a first amino acid sequence encoded by the DNA in FIG. 1 (SEQ ID NO:1) said first amino acid sequence being fused to a second amino acid sequence.

L7 ANSWER 26 OF 31 USPATFULL
93:84880 ***Mycoplasma*** ***hyopneumoniae*** antigen and uses therefor

Faulds, Daryl, Millbrae, CA, United States
Vishoot, Mimi, San Francisco, CA, United States
Brooks, Emily, Pacifica, CA, United States
Martin Marietta Energy Systems, Inc., Oak Ridge, TN, United States (U.S. corporation)
US 5252328 19931012
APPLICATION: US 1989-335726 19890407 (7)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A composition for protecting swine against mycoplasmal pneumonia caused by M. hyopneumoniae which includes at least one protein which is an M. hyopneumoniae antigen. The M. hyopneumoniae antigen is present in an amount effective for protection of swine against mycoplasmal pneumonia caused by M. hyopneumoniae. A preferred antigen is the M. hyopneumoniae 74.5 kda antigen.

CLM What is claimed is:
1. A composition comprising: at least one protein; and a vehicle for said at least one protein, said at least one protein being an M. hyopneumoniae antigen, having a molecular weight of 74.5 Kda, said at least one protein being present in an amount effective for protection of swine against mycoplasmal pneumonia caused by M. hyopneumoniae.

2. The composition of claim 1 wherein said composition comprises at least 5 micrograms of said at least one protein per dose.

3. The composition of claim 2 wherein said composition comprises at least 100 micrograms of said at least one protein per dose.

4. A method of protecting swine against mycoplasmal pneumonia caused by M. hyopneumoniae, comprising: administering to swine an effective amount of at least one protein, said at least one protein being an M. hyopneumoniae antigen having a molecular weight of 74.5 Kda.

5. The method of claim 4 wherein said at least one protein is administered in an amount of at least 5 micrograms per dose.

6. The method of claim 5 wherein said at least one protein is administered in an amount of at least 100 micrograms per dose.

L7 ANSWER 27 OF 31 USPATFULL
93:71858 Intranasal administration of ***Mycoplasma***

hyopneumoniae antigen.
Faulds, Daryl, Millbrae, CA, United States
ML Technology Ventures, L.P., New York, NY, United States (U.S. corporation)
US 5240706 19930831
APPLICATION: US 1989-334586 19890407 (7)
DOCUMENT TYPE: Utility; Granted.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for protecting an animal, in particular swine, against mycoplasma pneumonia by administering intranasally to the animal a ***vaccine*** containing one or more proteins which elicits an antibody which recognizes a ***Mycoplasma*** ***hyopneumoniae*** antigen which lacks immunosuppressive activity. A particularly preferred intranasal ***vaccine*** includes the 74.5 kDa antigen of ***Mycoplasma*** ***hyopneumoniae*** . The 74.5 kDa antigen may be of recombinant origin.

CLM What is claimed is:
1. A method of protecting an animal against mycoplasmal pneumonia caused by ***Mycoplasma*** ***hyopneumoniae*** , comprising: administering intranasally to the animal a ***vaccine*** comprising at least one protein which elicits an antibody which recognizes a ***Mycoplasma*** ***hyopneumoniae*** antigen which lacks immunosuppressive activity, said ***vaccine*** including said at least one protein in an amount effective for protection against mycoplasmal pneumonia caused by ***Mycoplasma*** ***hyopneumoniae*** , said ***vaccine*** being essentially free of ***Mycoplasma*** ***hyopneumoniae*** antigens which have immunosuppressive activity.

2. The method of claim 1 wherein said at least one protein elicits an antibody which recognizes a ***Mycoplasma*** ***hyopneumoniae*** antigen which has a molecular weight of at least 10 kDA and no greater than 350 kDa.

3. The method of claim 2 wherein said at least one protein elicits an antibody which recognizes at least one of the 22.5 kDa, 34 kDa, 36 kDa, 41 kDa, 48 kDa, 52 kDa, 64 kDA, 74.5 kDa, 79 kDa, 88.5 kDa, 96 kDa, or 121 kDa ***Mycoplasma*** ***hyopneumoniae*** antigens.

4. The method of claim 3 wherein said at least one protein is a protein which elicits an antibody recognizes the 74.5 kDa ***Mycoplasma*** ***hyopneumoniae*** antigen.

5. The method of claim 1 wherein said at least one protein is the 22.5 kDA, 34 kDA, 36 kDA, 41 kDa, 48 kDa, 52 kDA, 64 kDa, 74.5 kDA, 88.5 kDa, 96.5 kDa, or 121 kDA ***Mycoplasma*** ***hyopneumoniae*** antigen.

6. The method of claim 5 wherein said at least one protein is the 74.5 kDa ***Mycoplasma*** ***hyopneumoniae*** antigen.

7. The method of claim 5 wherein the 74.5 kDa M.hyopneumoniae antigen is produced from M.hyopneumoniae organisms.

8. The method of claim 6 wherein said 74.5 kDa M.hyopneumoniae antigen is of recombinant origin.

9. The method of claim 8 wherein said recombinant 74.5 kDa M.hyopneumoniae antigen is encoded by a DNA sequence which encodes for

at least a portion of the 74.5 kDa antigen having the amino acid sequence of FIG. 6.

10. The method of claim 9 wherein said DNA sequence includes mutations which change amino acid residue Val.sup.17 to Cys.sup.17 and change amino acid residue Val.sup.27 to Arg.sup.27 of said at least a portion of said 74.5 kDa antigen having the amino acid sequence of FIG. 6.

L10 ANSWER 8 OF 10 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
AN 1997-470887 [43] WPIDS
DNN N1997-392792 DNC C1997-149715
TI Defective viral genome which can only replicate in the presence of helper virus - useful in vaccines, especially to protect pigs, cats and dogs from viral pathogens, etc..
DC B04 C06 D16 P33
IN ALONSO VILLANUEVA, S; BALLESTEROS, J M L; CASTILLA CASTRILLON, J; ENJUANES SANCHEZ, L; GONZALEZ MARTINEZ, J M; IZETA PARMESAN, A; MENDEZ ZUNZUNEGUI, A; MUNTION SAENZ, M; PENZES, Z; PLANA DURAN, J; SANCHEZ MORGADO, J M; SANCHEZ SANCHEZ, C M; SMERDOU PICAZO, C; SOLA GURPEGUI, I; CASTRILLON, J C; DURAN, J P; JARRENO, M L B; SANCHEZ, L E; VILLANUEVA, S A; BALLESTEROS JARRENO, M L; BALLESTEROS JARENO, M L; ALONSO VILLANEUVA, S; MUNTIO SAENZ, M; PARMESAN, A I
PA (AMCY) CYANAMID IBERICA SA
CYC 76
PI WO 9734008 A1 19970918 (199743)* ES 99p
RW: AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN
AU 9719277 A 19971001 (199805)
ES 2109189 A1 19980101 (199809)
ES 2109189 B1 19980516 (199826)
CN 1218513 A 19990602 (199940)
BR 9708061 A 20000104 (200019)
EP 1008652 A1 20000614 (200033) EN
R: AL AT BE CH DE DK ES FI FR GB GR IE IT LI LT LU LV NL PT RO SE SI
HU 2000000356 A2 20000628 (200039)
JP 2000513565 W 20001017 (200056) 92p
MX 9807466 A1 19990501 (200056)
KR 99087724 A 19991227 (200059)
AU 729044 B 20010125 (200111)
ADT WO 9734008 A1 WO 1997-ES59 19970312; AU 9719277 A AU 1997-19277 19970312; ES 2109189 A1 ES 1996-620 19960314; ES 2109189 B1 ES 1996-620 19960314; CN 1218513 A CN 1997-194614 19970312; BR 9708061 A BR 1997-8061 19970312, WO 1997-ES59 19970312; EP 1008652 A1 EP 1997-907111 19970312, WO 1997-ES59 19970312; HU 2000000356 A2 WO 1997-ES59 19970312, HU 2000-356 19970312; JP 2000513565 W JP 1997-532304 19970312, WO 1997-ES59 19970312; MX 9807466 A1 MX 1998-7466 19980914; KR 99087724 A WO 1997-ES59 19970312, KR 1998-707192 19980911; AU 729044 B AU 1997-19277 19970312
FDT AU 9719277 A Based on WO 9734008; BR 9708061 A Based on WO 9734008; EP 1008652 A1 Based on WO 9734008; HU 2000000356 A2 Based on WO 9734008; JP 2000513565 W Based on WO 9734008; KR 99087724 A Based on WO 9734008; AU 729044 B Previous Publ. AU 9719277, Based on WO 9734008
PRAI ES 1996-620 19960314

AB WO 9734008 A UPAB: 19971030
A new defective viral genome comprises a parental viral genome containing viral replicase recognition signals at its 5' and 3' ends which has internal deletions; the defective genome depends on a helper virus to be able to replicate. Also claimed are: (1) an expression vector based on a defective viral genome as above (or its corresponding cDNA) which expresses either: (a) at least one antigen capable of inducing a systemic and secretory immune response or (b) at least one antibody which provides protection against an infectious agent; (2) a recombinant expression system comprising an expression vector as in (1) and a helper virus; and (3) a vaccine capable of inducing protection in animals against an infectious agent and comprising a recombinant expression system as in (2).

USE - The defective viral genome forms the basis of vaccine's for protecting (new-born) animals, particularly pigs, dogs and cats, from infectious agents. The mono- or multi-valent vaccines can be used to protect pig's from Actinobacillus suis, A. pleuropneumoniae, Haemophilus parasuis, porcine parvovirus, Leptospira, E. coli, Erysipelotrix rhusiopathiae, Pasteurella multocida, Bordetella bronchiseptica, Clostridium sp., Serpulina hydiosenteriae, Mycoplasma hyopneumoniae, porcine epidemic diarrhoea virus, porcine respiratory coronavirus, rotavirus and the pathogens which cause porcine respiratory and reproductive syndrome, Aujeszky's disease (pseudorabies), porcine influenza, transmissible gastroenteritis, atrophic rhinitis and proliferative ileitis. For use in dogs, the vaccines are preferably effective against canine herpesvirus, canine adenovirus types 1 and 2, canine parvovirus types 1 and 2, canine reovirus, canine coronavirus, canine (para) influenza virus, Distemper virus, rabies virus, retrovirus and canine calcivirus. Typical uses of such vaccines in cats are to protect against the following feline viruses: calcivirus, immunodeficiency virus, herpes virus, panleukopenia virus, reovirus, rotavirus, coronavirus, infectious peritonitis, rabies and leukaemia viruses and against Chlamydia psittaci.

ADVANTAGE - The defective viruses can only replicate in the presence of helper virus. Also, they are rendered species-specific according to the surface proteins provided by the helper virus (specifically the coronavirus glycoprotein S).

L32 ANSWER 14 OF 24 MEDLINE
92268650 Document Number: 92268650. PubMed ID: 1588157. Humoral immune response patterns of human mucosae: induction and relation to bacterial respiratory tract infections. Brandtzaeg P. (Laboratory for Immunohistochemistry and Immunopathology, University of Oslo, National Hospital, Rikshospitalet, Norway.) JOURNAL OF INFECTIOUS DISEASES, (1992 Jun) 165 Suppl 1 S167-76. Ref: 117. Journal code: IH3; 0413675. ISSN: 0022-1899. Pub. country: United States. Language: English.

AB Immunoglobulin-producing cells in mucosal tissues, quantitatively the body's most important humoral immune system, synthesize mainly dimers and larger polymers of IgA (poly-IgA) with incorporated J (joining) chain. Poly-IgA is actively transported to exocrine secretions by a transmembrane epithelial glycoprotein called secretory component. Enhancing ***secretory*** ***immunity*** by oral ***vaccination*** is an interesting possibility, but mucosal antigen uptake and local immune regulation are complex and only partly understood. Immunoglobulin isotype response patterns in the upper respiratory mucosa and distal gut are strikingly different. The preferential production of IgA1 in nasal and bronchial mucosae is intriguing in view of the frequent synthesis of IgA1-specific proteases by Haemophilus influenzae, Streptococcus pneumoniae, and Neisseria meningitidis. A relationship of proneness to produce invasive disease and enzymatically induced deterioration of ***secretory*** ***immunity*** has been proposed. Differences in mucosal immune response patterns among patients with selective IgA deficiency or IgG subclass deficiencies also suggest that local humoral immunity is an important variable in resistance to infections.

L32 ANSWER 11 OF 24 MEDLINE
95036726 Document Number: 95036726. PubMed ID: 7949458. Optimizing gastrointestinal delivery of drugs. Wilding I R; Davis S S; O'Hagan D T. (Pharmaceutical Profiles Limited, Nottingham, UK.) BAILLIERES CLINICAL GASTROENTEROLOGY, (1994 Jun) 8 (2) 255-70. Ref: 94. Journal code: BBG; 8704786. ISSN: 0950-3528. Pub. country: ENGLAND: United Kingdom. Language: English.

AB There is currently a great deal of effort being aimed at achieving effective delivery of novel therapeutic drugs, such as peptides, by the oral route. Opportunities have been identified which could lead to more convenient delivery systems for this class of drug. It is likely that a polypeptide given unprotected into the gastrointestinal environment will be degraded significantly. However, it is well known that small quantities of dietary proteins can be absorbed, even though these may have little or no physiological effect. It is felt that the colon may provide an advantageous absorption site for peptides. As a consequence there has been considerable interest, not only in the development of colonic delivery systems, but also in the establishment of strategies designed to maximize peptide absorption from the colon. Traditionally, ***vaccine*** research has been concerned with producing systemic immunity by parenteral immunization. However, the gradual acceptance of the importance of IgA in protecting mucosal surfaces against infection from numerous pathogenic organisms has led to an increased interest in oral immunization. Because of the existence of the CMIS, oral immunization induces ***secretory*** ***immunity*** in both the genital and respiratory tracts. Therefore, oral immunization offers the possibility for development of easily administered ***vaccines*** that will be effective in prevention against important respiratory and genital tract infections. The recent advances in recombinant DNA technology and the development of antigen delivery systems have given rise to optimism that several new and improved oral ***vaccines*** may be available by the next millennium.

L32 ANSWER 9 OF 24 MEDLINE
96290247 Document Number: 96290247. PubMed ID: 8725098. A continuous epitope from transmissible gastroenteritis virus S protein fused to E. coli heat-labile toxin B subunit expressed by attenuated Salmonella induces serum and ***secretory*** ***immunity*** . Smerdou C; Anton I M; Plana J; Curtiss R 3rd; Enjuanes L. (Department of Molecular and Cell Biology, Centro Nacional de Biotecnologia, CSIC, Madrid, Spain.) VIRUS RESEARCH, (1996 Mar) 41 (1) 1-9. Journal code: X98; 8410979. ISSN: 0168-1702. Pub. country: Netherlands. Language: English.

AB Antigenic site D from the spike protein of transmissible gastroenteritis virus (TGEV), which is a continuous epitope critical in neutralization, has been expressed as a fusion protein with E. coli heat-labile toxin B subunit (LT-B) in attenuated S. typhimurium. Synthetic peptides containing the sequence of site D induced TGEV neutralizing antibodies when inoculated subcutaneously in both rabbits and swine. A synthetic oligonucleotide encoding residues 373-398 of TGEV S protein, including antigenic site D, was cloned in frame with the 3' end of LT-B gene, into a plasmid used to transform S. typhimurium delta asd chi 3730. A collection of 6 recombinant plasmids designated pYALTB-D I-VI encoding LTB-site D fusions with a variable number of site D sequences were selected. Four of the 6 LTB-site D fusion products expressed in S. typhimurium chi 3730 formed oligomers (pentamers) that dissociated at > 70 degrees. S. typhimurium chi 3730 (pYALTB-D) V and VI expressed the oligomer forming products with higher antigenicity. Partially purified LTB-site D fusion product expressed from S. typhimurium chi 3730 (pYALTB-D) V induced anti-TGEV neutralizing antibodies in rabbits. Recombinant ***vaccine*** strain S. typhimurium delta cya delta crp delta asd chi 3987 transformed with plasmid pYALTB-D V expressed constitutively products that formed oligomers presumably containing 20 copies of site D, and showed a high stability in vitro. This recombinant strain was orally inoculated in rabbits and induced TGEV specific antibodies in both serum and intestinal secretion.

L32 ANSWER 8 OF 24 MEDLINE
97059254 Document Number: 97059254. PubMed ID: 8903575. New approaches to mucosal immunization. Langermann S. (Mucosal Immunity and Vaccines, MedImmune Inc., Gaithersburg, MD, USA.) SEMINARS IN GASTROINTESTINAL DISEASE, (1996 Jan) 7 (1) 12-8. Ref: 67. Journal code: B3Z; 9100391. ISSN: 1049-5118. Pub. country: United States. Language: English.

AB An ideal ***vaccine*** ought to produce long-term protective immune responses against a pathogen. These responses include humoral antibodies, which neutralize invasive microorganisms, and cytotoxic T cells, which destroy intracellular pathogens. Both types of responses can be induced by parenteral immunization, which is how most ***vaccines*** have been administered to date. Given that most bacteria and viruses initiate infections at mucosal surfaces where secretory immunoglobulin A (sIgA) antibodies are thought to play an important role in prevention of microbial attachment and colonization, there may be an added advantage for ***vaccines*** that stimulate long-lasting ***secretory*** ***immunity*** against pathogens as well. A prerequisite for the generation of sIgA antibodies is that antigens be delivered at mucosal sites. This review focuses on novel mucosal ***vaccination*** strategies aimed at inducing such ***secretory*** ***immunity*** to pathogens, while at the same time, stimulating humoral and, in some cases, cellular immunity.

L34 ANSWER 20 OF 70 MEDLINE
1998020865 Document Number: 98020865. PubMed ID: 9382757. Routes of

immunization and antigen delivery systems for optimal ***mucosal*** immune responses in humans. ***Mestecky J*** ; Michalek S M; Moldoveanu Z; Russell M W. (Department of Microbiology, Medicine, and Oral Biology, University of Alabama at Birmingham 35294, USA.) BEHRING INSTITUTE MITTEILUNGEN, (1997 Feb) (98) 33-43. Ref: 56. Journal code: 9KI; 0367532. ISSN: 0301-0457. Pub. country: GERMANY: Germany, Federal Republic of. Language: English.

AB Numerous experiments performed in humans and animals have revealed that stimulation of ***mucosal*** lymphoid inductive sites such as intestinal Peyer's patches results in parallel immune responses manifested by the appearance of S-IgA antibodies in the external secretions of remote glands. However, recent experiments suggest that inductive sites associated with the upper respiratory tract, rectum, and perhaps genital tract may also function as sources of lymphoid cells that populate, with some selectivity, certain remote ***mucosal*** effector sites. Furthermore, antigen-specific IgA antibodies can be induced in certain secretions (e.g., female genital tract) not only by immunization in the vicinity of corresponding ***mucosal*** tissues (e.g., vagina and rectum) but also by oral and especially intranasal immunization. The ineffectiveness of simple delivery of soluble antigens to ***mucosal*** membranes for immunization has stimulated extensive studies of strategies for effective delivery systems that would (a) increase the antigen absorption, (b) prevent its degradation, and (c) skew the outcome of immunization to a desired goal (protective response to infectious diseases vs. tolerance; B vs. T cell responses; ***mucosal*** vs. systemic). The induction of immune responses at a desired ***mucosal*** site can be accentuated with the use of a suitable antigen-delivery system including relevant bacterial or viral vectors, edible transgenic plants expressing microbial antigens, incorporation of antigens in biodegradable microspheres or liposomes, and linkage or coadministration of antigens with cholera toxin B subunit. However, only a few antigen-delivery systems extensively used in animal experimentation have been evaluated for their efficacy in humans. The combination of various immunization routes and the use of suitable antigen-delivery systems may accomplish an important task-the induction of ***mucosal*** immune responses at a location relevant to the site of entry of a given pathogen.

L34 ANSWER 48 OF 70 MEDLINE
92170218 Document Number: 92170218. PubMed ID: 1539467. The ***mucosal*** immune system: from fundamental concepts to vaccine development. McGhee J R; ***Mestecky J*** ; Dertzbaugh M T; Eldridge J H; Hirasawa M; Kiyono H. (Department of Microbiology, University of Alabama, Birmingham 35294.) VACCINE, (1992) 10 (2) 75-88. Ref: 156. Journal code: X6O; 8406899. ISSN: 0264-410X. Pub. country: ENGLAND: United Kingdom. Language: English.

AB Recent studies in experimental animals and humans have shown that the ***mucosal*** immune system, which is characterized by secretory IgA (S-IgA) antibodies as the major humoral defence factor, contains specialized lymphoid tissues where antigens are encountered from the environment, are taken up and induce B- and T-cell responses. This event is followed by an exodus of specific lymphocytes, which home to various effector sites such as the lamina propria regions and glands. These responses are regulated by T cells and cytokines and lead to plasma cell differentiation and subsequent production of S-IgA antibodies in external secretions. This knowledge has led to practical approaches for vaccine construction and delivery into ***mucosal*** inductive sites in an effort to elicit host protection at ***mucosal*** surfaces where the infection actually occurs.

L34 ANSWER 35 OF 70 MEDLINE
95125991 Document Number: 95125991. PubMed ID: 7825460. ***Mucosal*** immunity and strategies for novel microbial vaccines. ***Mestecky J*** ; Moldoveanu Z; Novak M; Compans R W. (Department of Microbiology, University of Alabama at Birmingham 35294.) ACTA PAEDIATRICA JAPONICA, (1994 Oct) 36 (5) 537-44. Ref: 51. Journal code: 1L3; 0370357. ISSN: 0374-5600. Pub. country: Australia. Language: English.

AB Infectious diseases continue to be the leading cause of morbidity and mortality worldwide. Increased awareness of the fact that ***mucosal*** membranes are the most frequent portals of entry of pathogenic microorganisms has prompted studies aimed at the development of vaccination protocols and antigen delivery systems that would lead to an increased protection of mucosae. Although systemic and strictly local immunizations are of limited effectiveness in the induction of ***mucosal*** protection, ingestion or inhalation of antigens results in a generalized immune response manifested by the appearance of specific antibodies of the secretory immunoglobulin (Ig) isotype in external secretions due to the dissemination of IgA precursor cells from IgA-inductive lymphoid tissues. Furthermore, additional inductive sites strategically positioned at the opening of the respiratory and digestive tracts may also be suitable targets for induction of immune responses at desired effector sites. To prevent degradation and the increase of ingested antigens absorption, novel strategies including enclosure of antigens into biodegradable microspheres, liposomes or their expression in viral and bacterial vectors and plants are currently being considered. Forthcoming technological advances in antigen preparation and routes of delivery will undoubtedly have a profound impact on immunization practices in the future.

L34 ANSWER 50 OF 70 MEDLINE
92096141 Document Number: 92096141. PubMed ID: 1755973. Targeting and controlled release of antigens for the effective induction of secretory antibody responses. ***Mestecky J*** ; Eldridge J H. (University of Alabama, Birmingham.) CURRENT OPINION IN IMMUNOLOGY, (1991 Aug) 3 (4) 492-5. Ref: 23. Journal code: AH1; 8900118. ISSN: 0952-7915. Pub. country: ENGLAND: United Kingdom. Language: English.

AB Increased awareness of the fact that the ***mucosal*** membranes are the portals of entry for the majority of infectious agents, and that antibodies in external secretions often correlate better with protection than do corresponding antibodies in serum, has prompted many recent studies aimed at the selective induction of antibodies in ***mucosal*** secretions. The recent development of novel technologies (expression of antigens in various microbial vectors that colonize ***mucosal*** surfaces and incorporation of antigens in biodegradable microspheres) indicate that the goal of vaccination with enhanced induction of both ***mucosal*** and systemic immune responses is attainable.